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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER DUONG, FRANK	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,285	Applicant(s) HANSSON ET AL.	
	Examiner Frank Duong	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. This Office Action is a response to communications dated 10/01/07. Claims 1-3, 5-8 and 10 are pending in the application.

Claim Objections

2. Claim 7 is objected to because of the following informalities: Lines 1-2, the term "*is adapted to be reused*" should be changed to --is reused--.

A typical reason for doing so is that such term or claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. See *MPEP* § 2111.049 [R.3].

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3, 5-8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per **base claim 1**, the claim is deemed to be indefinite for the following rationales:

Lines 13-14, the clause "wherein the states are either free or set ... halted path," recited thereat is vague. It is unclear what previously recited limitation the clause is

modified. Perhaps the Applicants should further amend "the states are" to --the free switch state is-- to better reflect that previously recited on line 12.

Lines 21-22, the term "said older part," recited thereat lacks of antecedent basis. Perhaps the Applicants should further amend the term to --said older portion-- to better reflect that previously recited on line 20.

Lines 6 and 20, the term "a congestion condition" is twice recited. Is the latter term referred to that previously recited on line 6?

Lines 12 and 16, the term "a free switch state is twice recited. Is the latter term referred to that previously recited on line 12?

Dependent **claims 2-3 and 5** variously depend from their indefinite base claim 1.

As per **claim 6**, the claims is deemed to be indefinite for the following rationales:

Lines 5-6, "the queue" recited thereat lacks of antecedent basis. Perhaps the Applicants should further amend the term to --the queue device-- to better reflect that previously recited on line 4.

Lines 17-18, "the respective indicator" recited thereat lacks of antecedent basis.

Line 23, "the set state" recited thereat is vague. It is unclear to what "set state" of the plurality of "set states" it is referred to. In addition, there is the "updated set state" previously referred to on line 17. Is this "the set state" referred to the "updated set state"?

Dependent **claims 7-8 and 10** variously depend from their indefinite parent claim 6.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 5-8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Turner et al (USP 7,012,889) (hereinafter "Turner").

Regarding **claim 1**, in accordance with Turner reference entirety, Turner discloses a method of switching a data flow of information packets (2C) between a sending (first component) and receiving (second component) entity (see *Abstract or col. 2, lines 61-64*), the method comprising:

buffering in a queue (276), the packets received from a plurality of paths (*col. 3, lines 6-10 or Fig. 7; block 705 and col. 11, lines 24-26*);

determining ($S(i,j)$) from a congestion indicator (backlogged state) that a congestion condition exists in the queue (*col. 3, lines 51-53 or Fig. 7; blocks 710, 720 and 742 and col. 11, lines 27-44*);

determining ($M(i,j)$) a number of packets received from each of the plurality of paths (*col. 3, lines 6-9*);

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sending a halt message (XOFF) to a sending entity corresponding to a halted a given path from which the greatest number of packets was received in the queue (*col. 3, lines 26-27 and col. 11, lines 41-44 or Fig. 7; block 742 and 744*);

determining if there is a free switch state associated with the queue, wherein the free switch state is either free or set, and each set state corresponds to a halted path (*Fig. 7; block 710 and col. 11, lines 27-28*),

if yes (*Fig. 7; block 712*), then:

storing (714) an indicator (*OFF*) of the halted given path in the free switch state including storing an indicator of the bandwidth associated with the halted path (*Fig. 3B depicts data structures 350 used to store state 361, time 362 and packet count 363 as discussed at col. 9, lines 3-11 or Fig. 7; blocks 714-716*);

if no (*Fig. 7; block 720*), then:

establishing a chronological order in which the set states were set (*col. 3. lines 50-65 or Fig. 7; block 730*);

determining an older portion of the set states (*col. 3. lines 50-65 or Fig. 7; block 734 and col. 11, lines 37-40*); and

purging the set state (*clearing packet*) in said older portion of the states corresponding to a halted path that has been halted the fewest number of times, and successively updating the congestion indicator when the queue reaches the congestion condition (*col. 3, lines 65-67 or Fig. 7; block 736 and col. 11, lines 35-40*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Turner also discloses reusing the purged state (*Fig. 7 depicts after block 736, the process loop back to block 705; thus, reuse the purged state (736)*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), Turner also discloses determining the queue congestion by a threshold (*status of each of the outputs of the system is equated to a "threshold" and it is discussed at col. 3, lines 22-23*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), Turner also discloses wherein the state includes a counter field (363), and the path bandwidth is noted in said counter field as the number of times (363) the respective path has been found to have provided the greatest number of packets in the queue (*Fig. 3B and col. 9, lines 3-11 and thereafter*).

(*Note: Claims 7-9 and 10 call for an apparatus having limitations mirrored the steps of method claims 1-3 and 5, respectively. Thus, they are rejected by the same rationales discussed above and as following*)

Regarding **claim 5**, in accordance with Turner reference entirety, Turner shows a device (Figs. 2A-2C) for switching a data flow of information packets intended for paths between a sending (first component) and receiving (second component) entity (see *Abstract or col. 2, lines 61-64 and Fig. 2C for connection details*), the device comprising:

a queue device for buffering in a queue (276), the packets received the paths (*col. 3, lines 6-10 or Fig. 7; block 705 and col. 11, lines 24-26 and Fig. 2C; Incoming Packet Queue 276*);

a device for halting a sending entity upon detecting congestion in the device queue, wherein the device for halting has means for halting the sending entity for a path from which the greatest number of packets was received in the queues (*Fig. 2C; block 271 or 291 and col. 8, lines 28-31 and 50-52*);

switch states for storing a halt condition whenever a corresponding path is halted, wherein each set switch state stores an indicator for indicating a number of times the state's corresponding halted path has been halted (*Fig. 3B depicts data structures 350 used to store state 361, time 362 and packet count 363 as discussed at col. 9, lines 3-11*);

means for determining $(M(i,j))$ a number of packets received from each of the plurality of paths (*col. 3, lines 6-9*);

means (271 or 291) for successively updating in each set state a respective indicator for indicating the number of times the state's corresponding halted path has been halted, as the queue is repeatedly congested: (*Fig. 2C depicts control block 271 or 291 and the description at col. 8 pertaining the control 271 or 291 referencing a data structure within control logic 271 or memory 272 controls rates as described in the processing flow of Fig. 7; block 710 and col. 11, lines 27-28 and Fig. 3B depicts data structures 350 used to store state 361, time 362 and packet count 363 as discussed at col. 9, lines 3-11 or Fig. 7; blocks 714-716*);

means for establishing a chronological order in which the set states were set (*col. 3, lines 50-65 or Fig. 7; block 730*);

means for determining an older portion of the set states (*col. 3, lines 50-65 or Fig. 7; block 734 and col. 11, lines 37-40*); and

means for purging the set state (*clearing packet*) in said older portion of the states corresponding to a halted path that has been halted the fewest number of times, and successively updating the congestion indicator when the queue reaches the congestion condition (*col. 3, lines 65-67 or Fig. 7; block 736 and col. 11, lines 35-40*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Turner also discloses reusing the purged state (*Fig. 7 depicts after block 736, the process loop back to block 705; thus, reuse the purged state (736)*).

Regarding **claim 8**, in addition to features recited in base claim 6 (see rationales discussed above), Turner also discloses a threshold detector for determining the congestion of the queue (*status of each of the outputs of the system is equated to a "threshold" and it is discussed at col. 3, lines 22-23*).

Regarding **claim 10**, in addition to features recited in base claim 6 (see rationales discussed above), Turner also discloses wherein the state includes a counter field (363), and the path bandwidth is noted in said counter field as the number of times (363) the respective path has been found to have provided the greatest number of packets in the queue (*Fig. 3B and col. 9, lines 3-11 and thereafter*).

Response to Arguments

5. Applicant's arguments with respect to claims 1-3, 5-8 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wilford et al (USP 6,687,247).

Tamir et al, HIGH-PERFORMANCE MULTI-QUEUE BUFFERS FOR VLSI COMMUNICATION SWITCHES, IEEE, pages 343-354, 1998.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



FRANK DUONG
PRIMARY EXAMINER

January 25, 2008